PERGAMON

Journal of Quantitative Spectroscopy & Radiative Transfer 74 (2002) III–VII

Journal of Quantitative Spectroscopy & Radiative Transfer

www.elsevier.com/locate/jqsrt

List of Contents

NUMBER 1

P. V.M. Devi, D.C. Benner, M.A.H. Smith, C.P. Rinsland and L.R. Brown 1 Self- and N_2-broadening, pressure induced shift and line mixing in the ν_5 band of $^{12}CH_3D$ using a multispectrum fitting technique

D.W. Mueller Jr and **A.L. Crosbie** 43 Three-dimensional radiative transfer in an anisotropically scattering, semi-infinite medium: generalized reflection function

S. Seven 69 A method for the determination of K shell fluorescence yields using photoionization

H. Fan, B. Li, L. Yang and **R. Wang** 75 Simultaneous estimation of the temperature and heat rate distributions within the combustion region by a new inverse radiation analysis

H. Fan, B. Li, L. Yang and **R. Wang** 85 Solution of the inverse radiative load problem in a two-dimensional system

L.H. Liu 97 Transient coupled radiation–conduction in infinite semi-transparent cylinders

L.H. Liu and **H.P. Tan** 115 Effects of polarization on radiation absorption in one-dimensional semitransparent slab exposed to collimated irradiation

Notes

R.R. Reddy, Y.N. Ahammed, B.S. Devi, P.A. Azeem, K.R. Gopal and **T.V.R. Rao** 125 Potential energy curves, dissociation energies and Franck–Condon factors of NI and ScI molecules

A. Goldman, C.P. Rinsland, A. Perrin, J.-M. Flaud, A. Barbe, C. Camy-Peyret, M.T. Coffey, W.G. Mankin, J.W. Hannigan, T.M. Stephen, V. Malathy Devi and **M.A.H. Smith** 133 Weak ozone isotopic absorption in the 5 μm region from high resolution FTIR solar spectra

NUMBER 2

B. Çalişkan, M. Ertuğrul, E. Öz and H. Erdoğan 139 Measurement of radiative vacancy distributions for the L_2, L_3 subshell and M shell of some elements with atomic range $41 \leqslant Z \leqslant 68$

B.M. Quine and **J.R. Drummond** 147 GENSPECT: a line-by-line code with selectable interpolation error tolerance

F.M. Kahnert, J.J. Stamnes and K. Stamnes 167 Using simple particle shapes to model the Stokes scattering matrix of ensembles of wavelength-sized particles with complex shapes: possibilities and limitations

J. Steinacker, B. Michel and A. Bacmann 183 Radiative transfer through a spherically symmetric cloud of extincting particles—exact solution of the inverse absorption problem

L. Liu, M.I. Mishchenko, S. Menon, A. Macke and A.A. Lacis 195 The effect of black carbon on scattering and absorption of solar radiation by cloud droplets

C.P. Rinsland, R. Zander, E. Mahieu, L.S. Chiou, A. Goldman and **N.B. Jones** 205 Stratospheric HF column abundances above Kitt Peak (31.9°N latitude): trends from 1977 to 2001 and correlations with stratospheric HCl columns

Y. Huang, X.-L. Xia and H.-P. Tan 217 Radiative intensity solution and thermal emission analysis of a semitransparent medium layer with a sinusoidal refractive index

X.-L. Xia, Y. Huang and H.-P. Tan 235 Thermal emission and volumetric absorption of a graded index semitransparent medium layer

Y. Huang, X.-L. Xia and H.-P. Tan 249 Temperature field of radiative equilibrium in a semitransparent slab with a linear refractive index and gray walls

NUMBER 3

J. Fischer and **R.R. Gamache** 263 Total internal partition sums for molecules of astrophysical interest

J. Fischer and **R.R. Gamache** 273 Partition sums for non-local thermodynamic equilibrium applications

A.R. Degheidy, M.T. Attia and M. Sallah 285 Stochastic radiative transfer in a finite plane-parallel medium with general boundary conditions

H. Zhang and **G.-Y. Shi** 299 Numerical explanation for accurate radiative cooling rates resulting from the correlated k-distribution hypothesis

P.J. Coelho 307 Numerical simulation of radiative heat transfer from non-gray gases in three-dimensional enclosures

G. Plantard and **M. Papini** 329 Radiative and electrical properties of granular materials: application to mixtures of insulating and conducting polymers

M. Chang and **Y.-Q. Jin** 339 The temporal Mueller matrix solution for polarimetric scattering from a layer of random non-spherical scatterers

C.M. Sikström, H. Nilsson, U. Litzén, A. Blom and **H. Lundberg** 355 Uncertainty of oscillator strengths derived from lifetimes and branching fractions

T. Viik and **N.J. McCormick** 369 Approximate polarization calculations with scalar radiative transfer theory

Notes

A. El-Shahat 377 Variational method for radiation transfer in an isotropically scattering, two infinite medium slab lattice

A.A. Hendi 389 Radiation transfer for a homogeneous half-space with an internal source

Ö. Söğüt, E. Büyükkasap, M. Ertuğrul and **A. Küçükönder** 395 Chemical effect on enhancement of Coster–Kronig transition of L_3 X-rays

NUMBER 4

L. Ibgui, A. Valentin, M.-F. Merienne, A. Jenouvrier, J.P. Lux, R.L. Doucen, B. Khalil and **J.-M. Hartmann** 401 An optimized line by line code for plume signature calculations II. Comparisons with measurements

W. Olchawa 417 Computer simulations of hydrogen spectral line shapes in dense plasmas

I.M. Grigoriev, N.N. Filippov, M.V. Tonkov, J.P. Champion, T. Gabard and **R. Le Doucen** 431 Line parameters and shapes of high clusters: *R* branch of the ν_3 band of CH_4 in He mixtures

W.J. Lafferty, J.-M. Flaud, H. Bürger and **G. Pawelke** 445 The ν_{13}, $\nu_5 + \nu_{15}$ and $\nu_9 + \nu_{15}$ bands of $^{10}B_2H_6$

L. Régalia-Jarlot, A. Hamdouni, X. Thomas, P. Von der Heyden and **A. Barbe** 455 Line intensities of the: ν_3, $4\nu_2$, $\nu_1 + \nu_3$, $3\nu_1$ and $2\nu_1 + 2\nu_2$ bands of $^{16}O^{12}C^{32}S$ molecule

M. Osiac, B.P. Lavrov and J. Röpcke 471 Intensity distributions in R and P branches of (0–0) band of the $A^1\Pi \rightarrow X^1\Sigma^+$ electronic transition of the BH molecule and determination of gas temperature in non-equilibrium plasmas

P.-F. Coheur, S. Fally, M. Carleer, C. Clerbaux, R. Colin, A. Jenouvrier, M.-F. Mérienne, C. Hermans and A.C. Vandaele 493 New water vapor line parameters in the 26000–13000 cm^{-1} region

Notes

X.-d. Li, S.-s. Han, C. Wang and Z.-z. Xu 511 Theoretical calculation of the relative abundance between He- and Li-like Ti under the coronal condition

C. Yildiz 521 The F_N solution of the time-dependent neutron transport equation for a sphere with forward scattering

O. Içelli and S. Erzeneoğlu 531 Measurement of coherent plus incoherent scattering differential cross-section of 59.5 keV γ-rays from gold

NUMBER 5

J. Halenka, W. Olchawa, B. Grabowski and F. Gajda 539 Perturber's charge effect on Stark broadened hydrogen lines in helium plasmas

T. Kuhn, A. Bauer, M. Godon, S. Bühler and K. Künzi 545 Water vapor continuum: absorption measurements at 350 GHz and model calculations

A. de Lataillade, J.L. Dufresne, M. El Hafi, V. Eymet and R. Fournier 563 A net-exchange Monte Carlo approach to radiation in optically thick systems

A. Milandri, F. Asllanaj, G. Jeandel and J.R. Roche 585 Heat transfer by radiation and conduction in fibrous media without axial symmetry

H.-C. Zhou, Y.-B. Hou, D.-L. Chen and C.-G. Zheng 605 An inverse radiative transfer problem of simultaneously estimating profiles of temperature and radiative parameters from boundary intensity and temperature measurements

Ch. Wenger, M. Rotger and V. Boudon 621 C_{4v} Top Data System (C_{4v} TDS) software for infrared spectrum simulation of XY_5Z symmetric molecules

A. Milandri, F. Asllanaj and G. Jeandel 637 Determination of radiative properties of fibrous media by an inverse method—comparison with the Mie theory

A. Asfaw, T.B. Bacha and D.D. Venable 655 Optical measurement of number density, vapor pressure and broadening parameters of Na in sub-micro Torr region

Note

T. Wujec, J. Halenka, A. Jazgara and **J. Musielok** 663 Calibration of the width of the NI spectral line at 7915.42 Å for electron density determination

NUMBER 6

J.J. Camacho, A.M. Polo, A. Pardo and **J.M.L. Poyato** 667 Laser-induced (4965) $B^1\Pi_u \rightarrow X^1\Sigma_g^+$ fluorescence of Na_2

E.A. Ustinov 683 Analytic evaluation of the weighting functions for remote sensing of blackbody planetary atmospheres: a general linearization approach

V. Eymet, A.M. Brasil, M.E. Hafi, T.L. Farias and **P.J. Coelho** 697 Numerical investigation of the effect of soot aggregation on the radiative properties in the infrared region and radiative heat transfer

D.S. Lemons and **B.J. Albright** 719 Quiet Monte Carlo radiation transport

H. Elloumi, M. Stambouli, J.J. Damelincourt and **B. Mrabet** 731 Integrating cylinder radiometry and photometry: Application to radiant flux and irradiance measurements

A. Dudhia, P.E. Morris and **R.J. Wells** 745 Fast monochromatic radiative transfer calculations for limb sounding

P.C. Guaranho de Moraes and **L.G. Guimares** 757 Uniform asymptotic formulae for the spheroidal angular function

Y. Qin, D. L.B. Jupp and **M.A. Box** 767 Extension of the discrete-ordinate algorithm and efficient radiative transfer calculation

Notes

N. Ekinci, R. Ekinci and **Y. Sahin** 783 Determination of iodine and calcium concentrations in the bread improver using EDXRF

C.E. Siewert 789 On computing the Chapman–Enskog functions for viscosity and heat transfer and the Burnett functions

I List of contents and Author Index, Volume 74, 2002